

CIRC. ACCESSION NO--AN0107482 UNCLASSIFIED PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--A MAJOR CYCLE OF INVESTIGATIONS OF THE IONOSPHERE WAS
CARRIED OUT WITH "MAYAK" RADIO STATIONS CARRIED BY THE SATELLITES. BY
MEANS OF PROLONGED MEASUREMENTS A DETAILED STUDY WAS MADE OF THE PATH OF
SPACESHIPS FROM THE POINT OF VIEW OF RADIATION SAFETY FOR MANNED
FLIGHTS. SOME "KOSMOS" SATELLITES WERE LAUNCHED SPECIALLY FOR STUDYING
COSMIC RAYS. THE EARTH'S MAGNETIC FIELD WAS A CONSTANT OBJECT OF
ATTENTION OF THESE SATELLITES. WITH THE "KOSMOS" SATELLITES SCIENTISTS
ACCOMPLISHED THE WORLD'S FIRST EXPERIMENT IN CARRYING RADIO TELESCOPES
FOR OBSERVING THE EARTH. FINALLY, THEY WERE USED FOR TESTING METHODS
OF AUTOMATIC DOCKING IN ORBIT. THIS EXPERIMENT BROUGHT NEARER THE DAY
OF CREATION OF ORBITAL STATIONS WHICH WOULD REMAIN IN ORBIT
FOR A LONG TIME. IN ADDITION TO FLIGHTS IN CIRCUMTERRESTRIAL SPACE, A
MAJOR PLACE IN THE SOVIET SPACE PROGRAM IS DEVOTED TO STUDY OF THE
NEAREST PLANETS AND DIFFERENT REGIONS OF THE SOLAR SYSTEM. AUTOMATIC
VEHICLES PLAY A KEY ROLE IN THESE INVESTIGATIONS. SOVIET SCIENTISTS
HAVE CREATED VEHICLES OF A RETURNABLE TYPE OF SPACE VEHICLE WHICH
ENSURES THE DELIVERY OF THE MEASUREMENT RESULTS TO THE EARTH FOR THEIR
SUBSEQUENT PROCESSING. ARTIFICIAL SATELLITES HAVE GIVEN OUR SCIENCE
VALUABLE INFORMATION CONCERNING THE MOON, VENUS AND SURROUNDING SPACE.
AT THE SAME TIME, THE DESIGN OF FUTURE MANNED ORBITAL STATIONS IS
BECOMING INCREASINGLY CLEAR.

UNCLASSIFIED

USSR

RUBTSOV, M. I., SPORYKHIN, V. I., PERVUSHEVEKIY, V. P., MOROZOV, V. F.,
LUTSET, B. Ya., SHCHUKIN, L. I.

"Impulse Gas-Discharge Light Source"

Otkrytiya Izobreteniya Promyshlennye Obrazts Tovarnye Znaki, No 31, 1972,
Patent No 355694.

Translation: 1. An impulse gas-discharge light source with an optically transparent tubular bulb, within which are a dielectric plate, used to elongate the discharge channel and electrode units assembled on one side of the bulb and separated by the plate, differing in that in order to increase the evenness of radiation in the plane perpendicular to the axis of the tube, increase the electrical breakdown resistance and limiting electrical loads on the discharge device, the dielectric plate is bent into a screw shape in the zone of the discharge, forming bifillar spiral channels with its two large edges, connected together by a channel, while the two small edges are hermetically sealed to the inside of the bulb, thus limiting the discharge channel.

2. A light source according to Claim 1, differing in that in order to increase the stability to the effects of mechanical loads, the electrodes are made as truncated cones, compressed against the side surface of the bulb wall.

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USSR

RURTSOV, M. I., SPORYKHIN, V. I., ET. AL., Otkrytiya Izobreteniya Promyshlennyye Obrazttsy Tovarnyye Znaki, No 5, 1972, Patent No 355694.



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"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002202710020-5

UNCLASSIFIED
FISCHER CYCLIZATION OF 5 SUBSTITUTED 2,2-PYRIDYL-HYDRAZONES OF
CYCLOHEXANONE -U-
AUTHOR--(03)-VAKHONTOV, L.N., PRONINA, YE.V., RUBTSOV, M.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 186-90
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HYDRAZONE, CYCLOHEXANONE, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0380
CIRC ACCESSION NO--AP0121068
STEP NO--UR/0409/70/000/002/0186/0190
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002202710020-5"

008
CIRC ACCESSION NO--AP0121068
ABSTRACT/EXTRACT--(U) GP-0-
SUB2 GROUPS IN POSITION 5 OF 2, (2, PYRIDYL) HYDRAZONES OF CYCLOHEXANONES
ON FISCHER CYCLIZATION UNDER CATALYSIS BY LEWIS ACIDS, ARENESULFONIC
ACIDS AND STRONG INORG. ACIDS WAS INVESTIGATED. FOR THE PREPN. OF
(5, METHYL, 2, PYRIDYL) HYDRAZONE (I) OF CYCLOHEXANONE, M. 56-7 DEGREES
(PETROLEUM ETHER), B SUB2 150 DEGREES, (5, METHYL PYRID, 2, YL) HYDRAZINE, M.
67-8 DEGREES, WAS OBTAINED BY REFLUXING 2, BROMO, 5, METHYL PYRIDINE WITH N
SUB2 H SUB4. H SUB2 0 6 HR. (5, CHLORO PYRID, 2, YL) HYDRAZINE
123-5 DEGREES (BENZENE), FOR THE PREPN. OF (5, CHLORO PYRID, 2, YL) HYDRAZINE
(II) OF CYCLOHEXANONE, M. 54-5 DEGREES, B SUB3 160 DEGREES (IN QUANT.
YIELD) WAS OBTAINED FROM 2, 5, DICHLORO PYRIDINE AND N SUB2 H SUB4. H SUB2
0. IN CONTRAST TO I AND II, WHICH WERE PREPD. WITHOUT SOLVENT, THE
PREPN. OF (5, NITRO PYRID, 2, YL) HYDRAZONE (III) OF CYCLOHEXANONE, M.
127 DEGREES (HEXANE), WAS CARRIED OUT IN ETOH IN QUANT. YIELD. I GAVE
WITH P, MEC SUB6 H SUB4 SO SUB3 H A NORMAL FISCHER CYCLIZATION PRODUCT:
5, METHYL, 9, 10, 11, 12, TETRAHYDRO, ALPHA, CARBOLINE (IV), M. 211 DEGREES
(ETOAC) IN 98 PERCENT YIELD; HCL SALT M. 259 DEGREES (ETOH-ME SUB2 CO).
CL SUB2 30 MIN AT 230 DEGREES GAVE 43.5 PERCENT IV; CATALYSIS BY CU SUB2
170 DEGREES YIELDED 60.1 PERCENT IV; AND ZNCL SUB2 IN 30 MIN AT 230 DEGREES
GAVE 42.2 PERCENT IV. BY DEHYDROGENATION WITH PD AT 270 DEGREES IV GAVE
5, METHYL, ALPHA, CARBOLINE, M. 269-70 DEGREES (ETOAC); HCL SALT M.
258-60 DEGREES.

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

3/4 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121068

ABSTRACT/EXTRACT--I AND BF SUB3.ET SUB2 O HEATED 6 HR AT 200DEGREES GAVE 63PERCENT 3,5,DIMETHYL,5,TRIAZOLO (4,3,A) PYRIDINE (V), M. 141DEGREES (C SUB6 H SUB6), AND 21.8PERCENT IV. V WAS ALSO PREPD. FROM (5,METHYL,2,PYRIDYL) HYDRAZINE AND HOAC BY REFLUXING 9 HR. I REFLUXED WITH HCL FOR 4 HR GAVE 26.6PERCENT 1,CYCLOHEXYL,12,METHYL, 7,8,9,10,TETRAHYDRO,1H,BENZ (E)PYRIDO (2,1,C), AS,TRIAZINE, M. 98-9DEGREES (HEPTANE). HEATING A MIXT. OF II AND P,MEC SUB6 H SUB4 SO SUB3 H AT 180-210DEGREES GAVE 81PERCENT 5,CHLORO,9,10,11,12,TETRAHYDRO,ALPHA,CARBOLINE (VI), M. 215-16DEGREES (ETOAC). BY USE OF POLYPHOSPHORIC ACID AT 210DEGREES THE YIELD OF VI WAS 81.7PERCENT; WITH SULFOSALICYLIC ACID THE YIELD WAS 69PERCENT; WITH P,MEC SUB6 H SUB4 SO SUB3 H THE YIELD WAS 81PERCENT; WITH ZNCL SUB2 29PERCENT. THE REACTION OF II WITH CU SUB2 CL SUB2 20 MIN AT 250DEGREES GAVE ONLY 2,AMINO,5,CHLOROPYRIDINE, M. 133-5DEGREES (37PERCENT). ONLY 5PERCENT 2,AMINO, 5,NITROPYRIDINE WAS ISOLATED FROM REACTION OF III WITH P,MEC SUB6 H SUB4, SO SUB2 CL AT 180DEGREES. ALSO, AN IRREGULAR COURSE WAS OBSERVED WHEN THE REACTION OF II WAS CARRIED OUT IN HCL IN REFLUX 5 HR; 1,CYCLOHEXYL, 12,CHLORO,7,8,9,10,TETRAHYDRO,1H,BENZO(E) PYRIDO (2,1,C),AS, TRIAZINE (45.5PERCENT, M. 112.5-13.5DEGREES) AND 29PERCENT VI WERE OBTAINED. FROM II, AND BF SUB3.ET SUB2 O, AND HOAC IN A SEALED TUBE 6 HR AT 200DEGREES. 57.3PERCENT 3,METHYL,5,CHLORO,5,TRIAZOLO (4,3,A) PYRIDINE (VII), M. 131-2DEGFEEES (C SUB6 H SUB6) AND 18.9PERCENT VI WERE OBTAINED. VII WAS IDENTICAL WITH THE PRODUCT OF REFLUXING (5,CHLOROPYRID,2,YL) HYDRAZINE WITH HOAC 9 HR.

FACILITY: VES. NAUCH.-ISSLED. KHIM. FARM. INST. IM.

UNCLASSIFIED

4/4 008
CIRC ACCESSION NO--AP0121068
ABSTRACT/EXTRACT--ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

UNCLASSIFIED
HETEROCYCLIC ALPHA AMINO NITRILES AND THEIR PROPERTIES. SYNTHESIS
AND REACTIONS OF 3-CYANO-5,6-DIAMINOQUINOLIDINES -U-
AUTHOR--(03)-MIKHLINA, YE.YE., VOROBEEVA, V.YA., RUBTSOV, M.V.
PROCESSING DATE--16OCT70
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 74-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CHEMICAL SYNTHESIS, HETEROCYCLIC NITROGEN COMPOUND, NITRILE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1365
CIRC ACCESSION NO--AP0054239
STEP NO--UR/0409/70/000/001/0074/0077
UNCLASSIFIED

008
CIRC ACCESSION NO--AP0054239 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT OF 30 G 3, QUINUELIDONE
CYANOHYDRIN (I), 40 ML PIPERIDIEN AND 300 ML C SUB6 H SUB6 WAS HEATED IN
A DEAN STARK APP. TO GIVE 28.3 G II ((R PRIME1 R PRIME2 EQUALS) (CH
SUB2)SUB5) (IIA), B SUB1 140-20DEGREES, ALSO OBTAINED IN 93.3PERCENT
YIELD WHEN 3 G I WAS KEPT 15 DAYS AT 20DEGREES WITH 20 ML PIPERIDINE AND
45 ML MECH. FORMULA SHOWN ON MICROFICH. FACILITY: VSES.,
NAUCH.-ISSLED. KHIM.-FARM. INST. IM. ORDZHONIKIDZE, MOSCOW. USSR.

PROCESSING DATE--16OCT70

UNCLASSIFIED

USSR

UDC 536.3.001.5

LEONT'YEV, A. I., RUBTSOV, N. A., PAVLYUCHENKO, A. M.

"Experimental Study of the Temperature Distribution in a Laminar Thermal Sublayer and in the Turbulent Core of a Boundary Layer in a Thermal Radiation Field"

V sb. Teplo- i massoperenos (Heat and Mass Transfer — Collection of Works), Vol. 1, Minsk, 1972, pp 355-362 (from RZh-Teploenergetika, No 7, Jul 72, Abstract No 11G155)

Translation: The effect of interaction of a gasdynamic field (both temperature and velocity) with the thermal radiation field was determined experimentally on the basis of finding in pure form the degree of deformation of the temperature field caused by this interaction. The experiments were conducted in a subsonic wind tunnel of the closed type. CO₂ was used as the absorbing gas. The measurement section consisted of a plane plate in a gas flow coming from a nozzle and forming a turbulent jet at the wall. The thermal radiation source was in the form of a SiC rod. Temperature in the boundary layer was measured with a resistance microthermometer with a tungsten gold-plated grid of diameter 20 μ . The experiments measured the velocity and temperature at

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USSR

LEONT'YEV, A. I., et al, Teplo- i massoperenos, Vol. 1, Minsk, 1972, pp 355-362

the edge of the nozzle (with a Prandtl tube and a screened thermocouple), the temperature of the plate and the thermal heat source (by thermocouples and optical pyrometer), the electrical load conducted to the plates, the temperature of the insulation under the plates and in the surrounding air (to calculate thermal losses). The measurements show that the linear dependence of the dimensionless temperature on the coordinates in the laminar sublayer that was obtained in air becomes considerably nonlinear in CO₂ in the presence of the radiation field. The maximum difference in the temperature profiles in the neighborhood of the walls in the CO₂ measurements and in air was 40-80. Consequently, the additive method in calculating thermal flows by convection and radiation to the wall (from the wall) without considering the interaction of the gasdynamic field and the thermal radiation field is unsuitable. These results are supported by an analysis of an approximation model corresponding to heat transfer considering radiation in a laminar thermal sublayer. 4 ill., 5 ref. E. G. Namsarayev.

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USSR

KUTATELADZE, S. S., et al, Doklady Akademii Nauk SSSR, vol 206, No 1, 1972, pp 71-73

of the metal. They are members of the Institute of Thermal Physics, Siberian Division of the USSR Academy of Sciences, at Novosibirsk.

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APPROVED FOR RELEASE: 08/09/2001

UDC: 536.212.2
CIA-RDP86-00513R002202710020-5

USSR

KUTATELADZE, S. S., Corresponding Member of the USSR Academy of Sciences; RUBTSOV, N. A.; and VERTE, A. E.

"Nonstationary Interaction of Thermal Radiation and the Surface of Pure Metals"

Doklady Akademii Nauk SSSR, vol 206, No 1, 1972, pp 71-73

Abstract: Two pieces of experimental equipment for verifying the experimentally demonstrated temperature anomaly in the surface layers of metals subjected to sudden heating by a constant-density thermal flux are described. This anomaly is here defined as the deviation between the experimentally determined temperature of the surface and the theoretically determined value as obtained through the solution of the equation of thermoconductivity with limiting conditions of the second kind. One of these devices realizes the sudden heating, under vacuum conditions of $6 \cdot 10^{-5}$ to $5 \cdot 10^{-6}$ mm Hg, while the other realizes the heating in air. The densities of the absorbed heat fluxes were varied from $5 \cdot 10^3$ to $6 \cdot 10^4$ w/m² and from $3 \cdot 10^3$ to $5 \cdot 10^4$ for the two devices respectively. From their work with this equipment, the authors conclude that the anomaly is confirmed and that its dimensions are determined by the state of the surface and the microstructure

1/2 035
UNCLASSIFIED
TITLE--RADIANT CONDUCTIVE HEAT TRANSFER IN A PLANAR LAYER OF AMMONIA --U-
AUTHOR--(02)-RUBTSOV, N.A., STEPANENKO, P.I.
COUNTRY OF INFO--USSR
SOURCE--INZH.-FIZ. ZH. 1970, 18(2), 216-23
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--HEAT TRANSFER, AMMONIA, TEMPERATURE GRADIENT, THERMAL
CONDUCTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1834
CIRC ACCESSION NO--AP0118798
STEP NO--UR/0170/70/018/002/0216/0223
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118798

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AN APPROXN. OF RADIANT CONDUCTIVE HEAT TRANSFER BY A LAYER OF CONDUCTING GAS IS DESCRIBED. THE EXPTL. EQUIPMENT CONSISTED OF 2 METAL PLATES PARALLEL TO EACH OTHER AND FORMING THE BED BOUNDARY, THE TOP ONE WAS HEATED, THE BOTTOM ONE WAS COOLED, THE DISTANCE BETWEEN THEM CAN BE ADJUSTED TO CONTROL THE COND. ZONE. PRESSURES OF 40 MM HG TO 2 ATM. WERE EXAMD. FOR NH SUB3 GAS. EQUATIONS ARE GIVEN FOR THE TEMP. GRADIENT, FOR SEPD. RADIATION AND CONDUCTION FLUXES, FOR THE COMBINED HEAT FLUX; THE 1ST ONE WAS ALSO TESTED EXPTL. AND VERY GOOD AGREEMENT WAS OBTAINED. THE RELATION IS GIVEN FOR THE PREDICTION OF AN EFFECTIVE THERMAL COND. WHICH WAS FOUND TO BE CRIT. FACILITY: INST. TEPLOFIZ., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 8.74

MOZHAROV, R. V., RUBTSOV, N. A.

"Simple Algorithm for Compressing the Programs for All-Purpose Digital Computers"

V sb. Ekon.-mat. metody i programmir. plan.-ekon. zadach (Mathematical Economic Methods and Programming Economic Planning Problems--collection of works), Moscow, 1972, pp 167-170 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V449)

Translation: In determining the redundancy of the programs written for the Minsk-22 digital computer, a study was made on the basis of which the following procedure is proposed for a decrease in redundancy. Each construction of the program is divided into four parts: the operation code -- 7 bits, the index code -- 6 bits, and 2 addresses of 12 bits each. All parts of the instruction are written in the cell one after the other (if they are not equal to zero); when any part of the program is equal to zero, it is not written in the cell. After the first instruction of the program, the second is written, and so on. Each instruction is placed in correspondence to a four-bit characteristic code (one bit for each part of the instruction). A one in the first bit of the characteristic code denotes the presence of a non-zero operation code of the instruction; a zero in the first bit of the characteristic code denotes the operation code of the instruction equal to zero, and so on. The 4-bit characteristic codes are written one after the other just as the parts of the instructions.

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RUBTSOV, Z.A.

SPRS 54908

6-73

XII-8. STUDY OF THE AUTOEPITAXIAL LAYERS OF GERMANIUM OBTAINED FROM HYDRIDES

[Article by Z. A. Rubtsov, V. A. Tolmasov, O. A. Kuznetsov, L. N. Kornau, R. A. Rubtsov, Gork'iy: Novosti tekhn. i inzh. stroyeniya po biologii, 1973, No. 1, S. 114-115; English transl. in Soviet J. Microelectron. Eng., 1973, No. 1, p. 121]

1. Layers of germanium were grown by the hydride method in a quartz reactor with high frequency heating and in a metal reactor with direct current heating on strongly alloyed germanium substrates.

2. The alloyed layers of germanium were grown from a mixture of by-
drides (germanium with diborane or phosphine).

3. The morphology, the structure and the electrical parameters of the germanium layers were investigated as functions of the crystallization conditions: the growth temperature, the hydride concentration, the linear flow rate, and the state of the substrate surface.

USSR

UDC: 537.312.62

KRAINSKIY, I. S., SHCHEGOLEV, I. F., RUETSOV, V. A.

"A Solenoid With Compensating Coils With H_c of 52,000 Bi/cm"

Moscow, Sverkhprovodyashchiye splavy i sovedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 177-185 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D566 [résumé])

Translation: The paper presents the results of development and experimental verification of a superconducting solenoid with highly homogeneous magnetic field. Various types of superconductor-superconductor contacts are studied. The minimum resistance of charged contacts is $6.9 \cdot 10^{-9} \Omega$. A superconductive welded contact is made with high critical parameters. The stability of the magnetic field of a solenoid with welded contact is better than $4 \cdot 10^{-8}$ over an 8-hour period. Magnetic field homogeneity is $3.6 \cdot 10^{-7}$ in a specimen 4 mm in diameter and 4 mm long. Three illustrations, two tables, bibliography of four titles.

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Reaction Kinetics

USSR

UDC 541.124/.126

~~RUBTSOV, YU. I.~~ RAYEVSKIY, A. V., IANELIS, G. B., Chernogolovka Branch,
Institute of Chemical Physics, Academy of Sciences USSR

"Kinetics of Thermal Decomposition of the Mixture of Ammonium and Guanidinium
Perchlorates"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 1, Jan 1970, pp 47-51

Translation: A diagram of fusibility was obtained and a study was made of the kinetics of thermal decomposition of the mixture of ammonium and guanidinium perchlorates. It was shown that the decomposition of ammonium perchlorate in the solid phase takes place below the temperature of phase transition. In the presence of liquid phase there is no drastic slowing down of the reaction after a 30% transformation. During phase transition, the liquid permeates the crystals of NH_4ClO_4 . Thereafter, the course of the reaction in the solid phase is inhibited due to dissolution of the potential centers of the initial reaction. The initial rate of decomposition of the liquid mixture of ammonium and guanidinium perchlorates is low. Acceleration of the reaction is related to the accumulation in the system of gaseous products of the reaction, which act as catalysts. The authors thank K. V. Titova for submitting the guanidinium perchlorate specimen.

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1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--KINETICS OF THE THERMAL DECOMPOSITION OF HYDRAZONIUM NITRATE -U-

AUTHOR--(02)-RUBTSOV, YU.I., MANELIS, G.B.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44 (2), 396-400

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DECOMPOSITION, NITRATE, CHEMICAL KINETICS, HYDRAZONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1890

STEP NO--UR/0076/70/044/002/0396/0400

CIRC ACCESSION NO--AP0118852

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0118852
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATES OF THERMAL DECOMP. OF N
SUB2 H SUB5 NO SUB3 (I) WERE MEASURED AT 194-254 DEGREES IN A
MICROCALORIMETER. THE DECOMP. WAS SELF ACCELERATED AND FOLLOWED 2ND
ORDER KINETICS. EXPTS. WITH VARIOUS RATIOS OF I TO AMPUL VOL.
INDICATED THAT THE DECOMP. INVOLVED THE EQUIL. DISSOCN. OF INFORMATION
SHOWN ON MICROFICHE. FACILITY: FILIAL INST. KHIM. FIZ.,
CHERNOGOLOVKA, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--KINETICS OF THE THERMAL DECOMPOSITION OF A MIXTURE OF AMMONIUM AND
GUANIDINIUM PERCHLORATES -U-
AUTHOR--(03)-RUBTSOV, YU.I., RAEVSKIY, A.V., MANELIS, G.B.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 47-51
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PERCHLORATE, THERMAL DECOMPOSITION, AMMONIUM COMPOUND, CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1889

STEP NO--UR/0076/70/044/001/0047/0051

CIRC ACCESSION NO--AP0118851

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 021

CIRC ACCESSION NO--AP0118851

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE DEPENDENCE OF THE M.P. UPON
COMPN. WAS EXAMD. FOR A MIXT. OF AMMONIUM AND GUANIDINIUM PERCHLORATES.
THE THERMAL DECOMPN. OF NH SUB4 CIO SUB4 (I) TAKES PLACE BELOW THE TEMP
OF THE PHASE CHANGE I.E. IN THE SOLID STATE. IN THE PRESENCE OF THE
LIQ. PHASE, THE DECOMPN. REACTION IS RETARTED. THE LIQ. PENETRATES INTO
THE CRYSTALS OF (I) DISSOLVING POSSIBLE ACTIVE CENTERS. THE INITIAL
DECOMPN. RATE OF THE LIQ. MIXT. OF PERCHLORATES IS LOW AND THE REACTION
HAS AN AUTOCATALYTIC CHARACTER. FACILITY: INST. KHIM. FIZ.,
CHERNOGOLOVKA, USSR.

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CHEMISORPTION OF OXYGEN ON SOLID SOLUTIONS OF THE MAGNESIUM OXIDE
NICKEL OXIDE SYSTEM -U-
AUTHOR-(02)-KEIYER, N.P., RUBTSOVA, L.F.
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL. 1970, 11(1), 200-6
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--OXYGEN, SOLID SOLUTION, MAGNESIUM OXIDE, NICKEL OXIDE,
ELECTRIC PROPERTY, CHEMISORPTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1458 STEP NO--UR/0195/70/011/001/0200/0206
CIRC ACCESSION NO--AP0120245

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120245

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NIO WAS DILD. IN A CATALYTICALLY
INERT MGD MATRIX TO STUDY THE STATE OF THE NI CATION BY EPR. THE NO. OF
CHEMISORBED O MOLS. PER NI CATION INCREASED WITH INCREASING NIO DILN.
THE ABOVE OCCURS DUE TO A DECREASING INTERACTION BETWEEN NI(II) IONS IN
DILD. SOLNS. THE EFFECT OF LOCAL ELEC. PROPERTIES OF THE SOLID SOLN.
SURFACE ON O CHEMISORPTION IS DISCUSSED. FACILITY: INST.
KATAL., NOVOSIBIRSK, USSR. ,

UNCLASSIFIED

R

Semiconductor Technology

USSR

POLYAKOV, N. M., and ELITSOVA, R. A., Garbuzhskiy Fizicheskiy Tekhnicheskii Institut

"Measuring Conductivity and Hall and of Rectangular Semiconductor Specimens Using a Tester With a Square Arrangement of Probes"

Moscow, Zavodskaya Laboratoriya, No 10, 1970, pp 1297-1310

Abstract: Formulas are derived for calculating conductance R_{xy} and R_{yx} Hall and of rectangular semiconductor specimens using a tester with a four probes arranged in a square. Correction multipliers are tabulated. The position of the tester on the surface of the specimen is varied by switching with an external circuit.

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MEASURING THE HALL COEFFICIENT OF LONG CYLINDRICAL SEMICONDUCTING
SAMPLES -U-
AUTHOR--(03)--RUBTSOVA, R.A., PAVLOV, N.I., KONKOV, V.L.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB., 1970, 36, (2), 201-203
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS
TOPIC TAGS--HALL CONSTANT, ELECTROMOTIVE FORCE, SEMICONDUCTOR PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0198 STEP NO--UR/0032/70/036/002/0201/0203
CIRC ACCESSION NO--AP0129454
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129454

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FORMULA FOR CALCULATING THE HALL COEFF. OF LONG CYLINDRICAL SEMICONDUCTING SAMPLES ON THE BASIS OF HALL E.M.F. MEASUREMENTS IS DERIVED. IN THESE MEASUREMENTS A STEADY CURRENT IS PASSED INTO THE SAMPLE THROUGH LOW RESISTANCE CURRENT CONTACTS DEPOSITED ON THE ENDS. A UNIFORM MAGNETIC FIELD IS DIRECTED AT RIGHT ANGLES TO THE SAMPLE AXIS. VARIATIONS IN THE MAGNETIC FIELD AT A DISTANCE OF MORE THAN TWO SAMPLE DIA. FROM THE HALL CONTACTS PRODUCE ONLY A NEGLIGIBLE ERROR IN THE RESULTS.

UNCLASSIFIED

Lubricants and Lubrication

USSR

UDC 659.36

R
SENTYURIKHINA, L. N., LYUBARSKIY, I. M., KURILOV, G. V., UDOVENKO, V. F., and
RUBTSOVA, Z. S., Physico-Technical Institute of Low Temperatures, Academy of
Sciences, Ukrainian SSR, Khar'kov

"Study of the Efficiency and Antifrictional Properties of Hard Lubricating
Coatings in Atmospheric Conditions and in High Vacuum With Simultaneous Study
of Gas Composition"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 4, 1970, pp 21-25

Abstract: Solid lubricants synthesized from MoS₂ and various film-forming agents
were studied in atmospheric conditions and in high vacuum. It was shown that the
efficiency of antifrictional properties of these materials depends to a large
degree on air humidity and the depth of vacuum. The life expectancy of these
coatings both in air and in vacuum depends on their chemical composition.
Coatings with organic film forming agents -- urea-formaldehyde and epoxy resins
-- performed for the longest period in air and in vacuum. Less durable were coat-
ings from silicon-organic polymers, while coatings with inorganic binder were
found to be more efficient in vacuum than under atmospheric conditions. The com-
position of the gas evolving during the friction also depends on the chemical com-
position of the film-forming agents.

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--LUBRICATING COATING -U-
AUTHOR--(05)--SENTYURIKHINA, L.N., RUBTSOVA, Z.S., PETROVA, L.N., LUTSENKO,
G.A., VIDNTSEK, N.I.
CCOUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 265,447
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--C9MAR70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHEMICAL-PATENT, PROTECTIVE COATING, LUBRICANT, CHEMICAL
COMPOSITION, MOLYBDENUM DISULFIDE, SILOXANE, BENZENE DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1798 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0130631
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0130631

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LONG LASTING LUBRICATING COATING
CONTAINS 60-75 WT. PERCENT MO DISULFIDE AND 25-40 WT. PERCENT
POLYMETHYLPHENYLSILOXANE RESIN WITH A UNIT STRUCTURE ((ME SUB2
SIO)(PHSIO SUB1.5)(PH SUB2 SIO) SUB0.35).

UNCLASSIFIED

USSR

UDC 618.492+612.275.1

SETTAROV, I. A. and RUCHANSKIY, B. Z., Andizhan State Medical
Institute imeni M. I. Kalinin

"Medicogenetic Characteristics of Twins Living in High Mountains"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 1, 1971, pp 28-30

Abstract: Preliminary studies were conducted on twins living in the town of Mayli-Saya (population 24,700) situated 850 to 1,300 m above sea level (Osh Oblast, Kirgiz SSR), including antigenic structure, dermatoglyphics, and intelligence. The population of the town is made up of immigrants from different parts of the country. Most of the twins (chiefly identical) born after 1963 are of Russian nationality (41.67%); then come Tatars (19.44%), Kirgizes (11.11%), and Germans (8.33%). The largest number of twins were born to mothers 26 to 30 years of age and the fewest, to those over 40. A comparison of the results of the intelligence tests with those given to twins born in the low-lying Fergana valley showed them to be almost identical.

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Acc. Nr:

AP0049793

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

UR 0183

R

101698a Copolymerization of vinyl chloride with acrylic acid. Ruchinskii, S. E.; Zay'valov, A. N.; Krut'soy, B. K.; Krentsel, B. A. (USSR). *Khim. Volokna* 1979, (1), 75 (Russ). Vinyl chloride (I) and acrylic acid (II) were copolymerized in MeOH contg. some H₂O at atm. pressure and -10 to 5° with an initiating system comprising (NH₄)₂S₂O₈, Rongalite, and Cu salts to give I-II copolymer (III), which was more condensed than the original monomer mixt., dyed well with basic dyes, had glass transition temp. ~100°, was more sol. in org. solvents than pure I polymer (IV) and formed fibers from acetone and HCONMe₂ solns. Fibers of III having 10% and 27.2% II had lower tex. strength, and % elongation than IV fibers, but higher shrink resistance (except for III with 27.2% II heated in air at 130°).

HCJR J

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REEL/FRAME
19801715

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Acc. Nr:

AP0052448

Abstracting Service:
GEOPHYSICAL ABST.

Ref. Code:

5/70 UR 0455

*91735u Liquid-phase mass transfer during fractional distillation in a film column with a smooth cylindrical rotor at low rotation speeds. Shafranovskii, A. V.; Ruchinskii, V. R. (Gos. Nauch.-Issled. Proekt. Inst. Asotn. Prom. Prod. Org. Sin., Moscow, USSR). *Teor. Osn. Khim. Tekhnol.* 1970, 4(1), 106-10 (Russ). The dependence of the overall height of a transfer unit on the liq.-phase flow rate at const. gaseous-phase flow rate was detd. for the system *n*-hexane-benzene. The measurements were made at rotor speeds of 275-1520 rpm (which correspond to linear peripheral velocities (*U*) 0.31-1.8 m/sec), with total or partial reflux, or with addnl. feed. The liq.-phase mass transfer in the region $0.21 < U < 0.78$ m/sec is of similar character to the transfer in liq. film gravitationally flowing down the vertical surface. The equations for the height of the liq. phase transfer unit h_l and for the liq.-phase mass-transfer coeff. β_l were detd. in the same region of *U*: $h_l = 2.8 Re_l^{0.32} (H/\delta)^{0.32} Sc_l^{0.4}$, and $\beta_l \delta / D_l = 0.087 Re_l^{0.32} (\delta/H)^{0.32} Sc_l^{0.4}$, where *H* is the wetted length of the column, δ the reduced film thickness, *D_l* the liq.-phase diffusion coeff. of the distributed compd., *Re_l* and *Sc_l* are the liq. phase Reynold and Schmidt nos., resp. A similar equation for β_l was found also for the absorption of CO₂ by a laminar-flow water film. Equations for h_l and β_l can be used also for the mass-transfer calcns. for countercurrent absorption or rectification in film columns without rotor at $Re_l < 300$. L. Kuca

REEL/FRAME

10821082

USSR

UDC 681.3.001.51

RUCHKA, Ye. I.

"Study of One Model of Control of a Digital Computer Complex as a Queuing System"

Tr. Mosk. Aviats. In-ta [Works of Moscow Aviation Institute], No. 194, 1970, pp 37-43 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4E39 by BG).

Translation: In order to determine the productivity of a digital computer, a model of control of a digital computer complex is presented as a two-unit, two-phase queueing system, realizing program P written in the language of machine M and consisting of an ordered set of instructions $K=\{K_1, K_2, \dots, K_Q\}$, servicing a flow of requests from external subscribers arriving in a common line $r(0 < r < \infty)$. The productivity of the computer means the average rate of calculations achieved considering the time expended on input and primary processing of information from sources, placement of information in memory, conversion and adaptation of control information arriving from the computer before the information is sent to the subscribers. It is indicated that the model suggested is suitable for analysis of computer controllers when the information from the sources first passes through preliminary processing by specialized computers, is accumulated in an exchange memory, then is sent to the central computer for servicing as necessary. 1 biblio refs.

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USSR

UDC 621.376.53(088.8)

RUCHKIN, V. V., KARAULOV, B. A.

"A Demodulator for Polarity Modulated Signals"

USSR Author's Certificate No 254585, Filed 3 Jun 68, Published 11 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D77 P)

Translation: This Author's Certificate introduces a demodulator for polarity modulated signals. The unit is made in the form of two channels with a common input, each of the channels containing keys and pulse expanders for recording the maximum values of the positive and negative half-waves of the polarity modulated signal at the instants of maximum values of the half-waves of the subcarrier frequency signal. The device also contains a gating pulse shaper for controlling the keys. To reduce distortions, the above-mentioned pulse expanders are connected between the lower frequencies, the input signal is fed to the gating pulse shaper through a narrow-band filter (such as a quartz filter) which isolates the subcarrier frequency signal, and through a phase shifter, and the ratio between the gating pulse duration and the subcarrier frequency period is taken as 0.01-0.02.

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USSR

UDC 546.641'161+546.664'161+645.665'161+546.666'161+546.668'161

STRIZHKOV, B. V., RUCHKIN, YE. D., KHEIKOROV, V. S., PCHELAIN, V. A., NIKITENKO, L. S., and KHROMOV, A. D.

"Production of Anhydrous Fluorides of the Yttrium Subgroup of Rare-Earth Elements"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, No 8, 1972, pp 1428-1433

Abstract: The anhydrous REM fluorides are a promising material for the manufacture of thin-film condensers by vacuum sputtering. One method of manufacturing anhydrous REM fluorides is by thermal decomposition of the hydrated fluorides of these elements. One shortcoming of this method is that dehydration upon heating may be accompanied by pyrohydrolysis. The method has not been fully studied. The present work studies the process of production of anhydrous fluorides of Y, Dy, Ho, Er, and Yb by thermal decomposition of their hydrates in air, in a current of a dry inert gas and in a vacuum. The methods of thermal, crystalloptical, x-ray structural, and chemical analyses plus IR spectroscopy were used to study the specimens. The dehydration of the fluorides was found to be a multistage process. Complete removal of the water of crystallization requires heating to 500-600°C (somewhat lower in a vacuum), apparently a result of the deep penetration of water molecules into the defective crystalline lattice of the fluorides. Initial

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- 75 -

USSR

Strizhkov, B. V., Ruchkin, Ye. D., Krikorov, V. S., Pchelkin, V. A., Nikitenko, L. S., Khromov, A. D., Moscow, Neorganicheskiye Materialy, No 8, 1972, pp 1428-1433.

dehydration removes all but approximately 0.5 mol of the water rather easily, after which dehydration is more difficult and apparently is accompanied by ordering of the crystalline structure of the substance. The temperature of complete dehydration can be reached only in a vacuum or in a current of a dry inert gas; otherwise, the process of pyrohydrolysis begins before the dehydration reaction is completed.

2/2

1/2 008 UNCLASSIFIED
TITLE--MIXED PLATINUM CHALCOGENIDES -U- PROCESSING DATE--16OCT70
AUTHOR--(03)-RUCHKIN, YE.D., VOSTRIKOVA, L.A., BATSANOV, S.S.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 252-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATER ALS, CHEMISTRY
TOPIC TAGS--PLATINUM COMPOUND, CHALCOGENIDE GLASS, TELLURIDE, SELENIDE,
SULFUR COMPOUND, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/0185 STEP NO--UR/0363/70/005/002/0252/0256
CIRC ACCESSION NO--AP0115889
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115889

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYNTHESIS CONDITIONS WERE FOUND AND MIXED PT(IV) CHALCOGENIDES WERE PREPD. FROM THE REACTIONS OF THE TYPE PTX PLUS Y, PTY PLUS X, AND PT PLUS X PLUS Y (WHERE X, Y EQUALS S, SE, TE). AT 500-600DEGREES, NO EXCHANGE TAKES PLACE IN THE PTX SUB2 PLUS PTY SUB2 SYSTEMS. THE COMPD. PTSE WAS PREPD. FOR THE 1ST TIME, AND THE PARAMETERS FOR THE HEXAGONAL LATTICES OF PTSSE AND PTSETE WERE DETD. THE EFFECT OF THE SYNTHESIS CONDITIONS ON SUCH PROPERTIES OF THE CHALCOGENIDES AS THE D. AND THE ELEC. COND. WAS STUDIED.
FACILITY: INST. TEPLOFIZ., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 ~ 018
UNCLASSIFIED
PROCESSING DATE--18SEP70
TITLE--QUASIAUTONOMOUS SYSTEMS IN THE ABSORBANCE SPECTRUM OF
2,4-DINITRO,1,NAPHTHYLAMINE -U-
AUTHOR-(02)-MILLIARESI, YE.YE., RUCHKINA, N.G.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD.-NAUK SSSR 1970, 190(3), 600-3 (CHEM)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ABSORPTION SPECTRUM, NAPHTHALENE, AMINE, ORGANIC NITRO
COMPOUND, MOLECULAR STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/1580
STEP NO--UR/0020/70/190/003/0600/0603
CIRC ACCESSION NO--4T0100198
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13SEP70

CIRC ACCESSION NO--AT0100198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABSORPTION SPECTRA WERE REPORTED FOR 1-NAPHTHYLAMINES WITH 2 AND 4-NO SUB2 GROUPS IN VARIOUS COMBINATIONS. ALSO REPORTED WERE SPECTRA FOR 14 ANALOGS WITH 1 POSITION SUBSTITUTED BY HU SUB2, NHET, OR NET SUB2, AND 2 AND (OR) 4 SUBSTITUTED NO SUB2 GROUPS. THE SPECTRUM OF EACH WAS DISCUSSED AS A DERIV. OF THE SPECTRUM OF THE BASIC STRUCTURE OF NITRONAPHTHYLAMINES. THE LIKELY ELECTRON TRANSITIONS RESPONSIBLE FOR THE BANDS WERE BRIEFLY STATED.

UNCLASSIFIED

Miscellaneous

USSR UDC 547.495.2+546.185-31'39+546.212/.002.612.1.03

SARAYEV, A. N., POLYAKOV, TE. V., TYUMINA, N. F., POLYAKOVA, Z. A., and
RUCHKOVA, A. KH.

"The Physico-Chemical Properties of Aqueous Solutions of Carboammophos of
Grade 1:1"

Moscow, Khimicheskaya Promyshlennost', Vol 48, No 6, Jun 72, pp 437-438

Abstract: The solubilities, density, and vapor pressure in relation to the concentration and temperature in the system $\text{CO}(\text{NH}_2)_2 \cdot \text{NH}_4 \text{H}_2\text{PO}_4 \cdot \text{H}_2\text{O}$ ($\text{NH}_4\text{P}_2\text{O}_5$ 1:1) were determined experimentally. On the basis of the data obtained, a diagram was plotted (figure) which represents the physico-chemical properties of aqueous solutions of carboammophos 1:1 at concentrations of 0-97% by weight and pressures of 20-760 mm Hg. The diagram covers the total range of existence of aqueous solutions of this fertilizer. By using it, the solubility, concentration, temperature, vapor tension, boiling point, density, and specific volume of carboammophos 1:1 solutions can be determined and also the relation between the liquid and solid phase in the range of saturated solutions of the fertilizer. Because of the hydrolysis of urea, the properties of the system do not correspond to equilibrium. However, the diagram applies if determination of the experimental characteristic that is urea are carried out rapidly.

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USSR

UDC: 659.016

SAMSONOV, G. V., KOSENKO, V. A., RUD', B. M., and SIDOROVA, V. G.

"Some Characteristics of Palladium Boride"

Tomsk, Izvestiya VUZ--Fizika, No 6, 1972, pp 146-147

Abstract: Asserting that there is little data on the characteristics of the phases of Pd-B systems, the authors of this brief communication investigate the conditions for obtaining palladium borides by synthesizing the elements and measure the electrical resistivity and thermal emf in the 20-800° C range. The original material used for synthesizing the borides were amorphous boron with a purity of 99.6% and palladium powder 99.99% pure. It was established, by thermal, x-ray, metallographic, and chemical analyses, that the synthesis process for Pd₃B had to be done in a temperature interval of 700-900° for 5-6 hours, while the interval of 800-950° for 60-70 hours was required to synthesize Pd₅B₂. Curves are plotted for the resistivity of the Pd₃B and Pd₅B₂ phases and for the thermal emf of those phases as functions of the temperature. The authors are associated with the 50th Anniversary of the Great October Socialist Revolution Polytechnical Institute at Kiev.

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- 31 -

USSR

UDC 621.791:621.315.66:62 - 462

ZAYTSEV, A. L., Engineer, ~~RUD~~ S. V., Engineer (Zhdanov Metallic Construction Plant), SHINKAREV, B. M. Candidate of Technical Sciences (Minmontazhspestroy UkrSSR)

"Manufacturing Welded Radio Antenna Masts of Tubular Profiles"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 70, pp 17-19

Abstract: A study was made of a welding method using 2.1-2.2-mm PP-AM4 iron powder wire with supplementary carbon dioxide arc protection for the production of radio antenna masts of rectangular or tubular cross section. The presence of slag-forming components in the core, in combination with the carbon dioxide protection, makes it possible to effectively deoxidize the molten bath, and to reduce its gas content (0.010% nitrogen, 0.040% oxygen). The impact ductility of such welds on low-carbon and particularly on low-alloy construction steels (S 35-S 40), remains high at temperatures of -60°C and lower. Welding with PP-AM4 wire with carbon dioxide protection is recommended for structures made from low-carbon and low-alloy steels. Photographs and descriptions of various production setups and welding rigs are included. Orig. art. has: 4 figures and 2 tables.

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USSR

R

DRUIN, V. A., SKOBELEV, N. K., RUD', V. I., Joint Institute for Nuclear Research

"The Spontaneous Fission of Some Fm Isotopes"

Moscow, Yadernaya Fizika, Vol 12, No 1, 1970, pp 44-49

Abstract: The project was undertaken in order to check the influence of sub-shell $N=152$ on the spontaneous fission of Fm isotopes with the number of neutrons $N < 152$. The spontaneous fission half-lives of isotopes Fm^{246} , Fm^{248} , and Fm^{250} produced in the reactions $\text{U}^{233}(018, 5n)\text{Fm}^{246}$, $\text{U}^{238}(016, 6n)\text{Fm}^{248}$, and $\text{U}^{238}(018, 6n)\text{Fm}^{250}$ are determined. The measured value of the spontaneous fission half-life for Fm^{246} , $T_{sf} \sim 20$ sec, is in agreement with a value obtained earlier, and the value for Fm^{248} , $T_{sf} \sim 60$ hours, is greater than that of data published earlier. For Fm^{250} a T_{sf} value of about 10 years was obtained.

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Communications

USSR

356
BOOK

UDC: 621.382.2

AKCHURIN, Eduard Aleksandrovich, RUD', Viktor Vasil'yevich,
SPIRIN, Vladimir Yakovlevich

TUNNEL'NYE DIODY V TEKHNIKE SVYAZI (Tunnel Diodes in Communi-
cations Engineering), Moscow, "Svyaz'", 1971, 137 pp, illus,
biblio, 13 850 copies printed

The book investigates basic tunnel diode devices used in
communications technology (amplifiers, frequency converters,
self-excited oscillators, etc.), giving particular attention to
questions of stability of the characteristics of the devices.

Written for engineers as well as graduates and under-
graduate upperclassmen in radio engineering.

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USSR

AKCHURIN, E. A. et al., TUNNEL'NYYE DIODY V TEKHNIKE SVYAZI,
Moscow, "Svyaz'", 1971

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USSR

AKCHURIN, E. A. et al., TUNNEL'NYE DIODY V TEKHNIKE SVYAZI,
Moscow, "Svyaz'", 1971

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USSR

AKCHURIN, E. A. et al., TUNNEL'NYYE DIODY V TEKHNIKE SVYAZI,
Moscow, "Svyaz'", 1971

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4/4

USSR

UDC: 621.382.233(38)

AKCHURIN, E. A., RUD', V. V., SPIRIN, V. Ya.

"Tunnel Diodes in Communications Technology"

Tunnel'nyye diody v tekhnike svyazi (cf. English above), Moscow, "Svyaz'", 1971, 137 pp, ill. 50 k. (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5A10 K)

Translation: The authors investigate fundamental tunnel-diode devices used in communications technology (amplifiers, frequency converters, self-excited oscillators, etc.). Particular attention is given to problems of the stability of the characteristics of these devices. The book is written for engineers, graduate students and advanced undergraduate students majoring in radic engineering. There are 149 illustrations, 6 tables, and a bibliography of 44 titles. Annotation.

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AP0020642 CHEMICAL ABST.

R-70 NE0000

25904x Conditions of crystallization of a chemical compound from a melt enriched with a volatile component. Prokof'ev, S. V.; Rud. Yu. V. (A. F. Ioffe Phys.-Tech. Inst., Leningrad, USSR). *J. Cryst. Growth* 1970, 6(2), 187-9 (Eng). Crystn. conditions are examd., by using as an example, CdTe, whose melt is enriched with Cd. The deviations of the melt compn. from the compn. corresponding to the max. melting temp. of CdTe leads to the appearance of constitutional supercooling at the crystn. front. Constitutional supercooling, in turn, leads to an increase in the probability of the growth of a polycrystal, whose individual monocryst. grains possess strongly pronounced twinning. An examn. is made of the effect on the crystn. conditions of the removal of the excess of the volatile component of the chem. compd. from the melt in the form of bubbles. RCMT

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RUDA, B.I.

SPRS 55008

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SESSION VII

VII-1a. APPLICATION OF THE METHOD OF CONTINUOUS WEIGHING FOR STUDYING THE ETCHING AND GROWTH PROCESSES IN THE $\text{Ga-AsCl}_3\text{-H}_2$ SYSTEM

Article by B. I. Rudakov, E. S. Kuznetsov, R. R. Maslov, V. Yu. Pospelov, A. I. And, Ye. V. Solov'yev, Moscow: Novosibirsk, All-Union Symposium on Processes in Semiconductors, Poluprovodnikoviy Kristallo i Plozma, Krasnoyarsk, 12-17 June, 1972, p. 85j

A simple method of continuous weighing has been developed to investigate the etching rates of gallium and the growth of the epitaxial layer of GaAs. On completion of the period of saturation of the gallium with arsenic, the composition of the gas phase is changed sharply, and the gallium content in the gas flow under stationary conditions corresponds to the equilibrium above of AsCl_3 introduced into the reactor. In contrast to the available published data it has been found that the growth rate of the GaAs layer is established in practice immediately with respect to completion of the saturation period. The nature of the experimental dependences of the growth rate on the process parameters indicates that the growth of GaAs takes place in the diffusion-kinetic region. The temperature profile in the reactor was determined for which the radial gradients are eliminated which cause uncontrolled nucleation of the GaAs on the reactor walls in the substrate zone. A study was made of the effect of the conditions of the growth process on the structure and the electrical properties of the unalloyed epitaxial layers of GaAs. The electron mobility in the layers grown under optical conditions reached $8250 \text{ cm}^2/\text{v-sec}$ at 300°K and $63,000 \text{ cm}^2/\text{v-sec}$ at 77°K with a concentration of them of $3 \cdot 10^{14} \text{ cm}^{-3}$.

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Layers of potassium arsenide grown in the $\text{Ga-AsCl}_3\text{H}_2$ system were alloyed either by thermal evaporation of the impurity (Fe, In) or by introduction of it in the form of a Raseau compound (Ga_2S_3 , $\text{C}_6\text{H}_6\text{Zn}$). The dependence of the carrier concentration in the layers on the annealing concentration in the gas phase was found. With an increase in the tellurium content, the growth rate of the layer drops almost to zero whereas the zinc practically has no effect on the growth rate. The use of diethyl zinc does not lead to worsening of the electrophysical parameters of the layers by comparison with the alloying by the method of thermal evaporation of zinc. The concentration of the charge carriers in the layers alloyed with tellurium and selenium is reduced in the direction of the gas flow whereas in the layers alloyed with zinc, the concentration of the carriers increases a little. This difference is connected with the difference in the coefficients of the vapor-crystal junction. According to the data of electrophysical studies, the degree of compensation of the donors in the layers alloyed with selenium is constant and close to 0.5. An increase in the tellurium concentration in the layer leads to an increase in the donor location density and the number of growth pyramids. In the spreading alloyed with selenium with a carrier concentration of the type of $5 \cdot 10^{18} \text{ cm}^{-3}$, either an increase in the dislocation density to $1 \cdot 10^6 \text{ cm}^{-2}$ or the appearance of specific microdefects was observed. At low alloying levels with selenium ($5 \cdot 10^{16} \text{ cm}^{-3}$) and in the entire range of alloying with zinc using diethyl zinc, the dislocation density in the layer is close to the dislocation density in the substrate; the morphology of the layers does not change.

1/2 020 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THE HEMODYNAMICS IN COUNTER PULSATION -U-
AUTHOR-(05)-CHAZOV, YE.I., BOGOSLOVSKIY, V.A., MAZAYEV, V.P., RUDA, M.YA.,
TRUBETSKOY, A.V.
COUNTRY OF INFO--USSR
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP
23-30
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART RATE, BLOOD PRESSURE, HEMODYNAMICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1990/0642 STEP NO--UR/0481/70/000/002/0023/0030
CIRC ACCESSION NO--AP0108853
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09DCT70

2/2 020

CIRC ACCESSION NO--AP0108853

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. UNDER THE INFLUENCE OF COUNTER PULSATION THE HEART RATE DROPS SLIGHTLY, THE MAXIMAL AND MEAN SYSTOLIC ARTERIAL PRESSURE DECLINES AND MAXIMAL DIASTOLIC ARTERIAL PRESSURE INCREASES. THE RISE OF THE MEAN DIASTOLIC ARTERIAL PRESSURE WAS LESS MARKED BUT WAS STATISTICALLY SIGNIFICANT. THERE WAS AN ESSENTIAL DROP OF THE TERMINAL DIASTOLIC ARTERIAL PRESSURE AND NO CHANGES OF THE MEAN ARTERIAL PRESSURE. INCREASE OF THE CARDIAC OUTPUT AND ACCELERATION OF THE CIRCULATION RATE WERE INSIGNIFICANT. THE EXTERNAL WORK OF THE LEFT VENTRICLE AGAINST THE BACKGROUND OF COUNTER PULSATION COMPRISED ONLY 84PERCENT FROM THE INITIAL VALUE. THE TIME CONTRACTION INDEX DECREASED BY 24PERCENT. THE GENERAL PERIPHERAL RESISTANCE AGAINST THE BACKGROUND OF ASSISTED PERFUSION MODERATELY DECLINED. THE AUTHORS SHOW THAT A NUMBER OF GENERALLY ACCEPTED INDICES COULD NOT ADEQUATELY REFLECT THE FUNCTIONAL STATE OF THE HEART DURING COUNTER PULSATION. A REGULARITY WAS NOTED THAT THE INFLUENCE OF PERFUSION ON ALL HEMODYNAMIC INDICES BECAME MORE PRONOUNCED SOME TIME AFTER THE BEGINNING OF PERFUSION.

FACILITY: INSTITUT KARDIOLOGII IM. A. L. MYASNIKOVA AMN SSSR, MOSCOW.

UNCLASSIFIED

1/3 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--GAMMA RAY SPECTRA FROM THE, N, GAMMA, REACTION FOR THERMAL NEUTRONS
IN GERMANIUM 70, GERMANIUM 72, AND GERMANIUM 73 NUCLEI -U-
AUTHOR--(03)-RUDAK, E.A., FIRSAY, YA.I., KHILMANOVICH, A.M.

COUNTRY OF INFO--USSR *R*

SOURCE--VESTI AKAD. NAVUK BELARUS. SSR, SER. FIZ.-MAT. NAVUK 1970, (1),
95-100
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--GAMMA SPECTRUM, NEUTRON ABSORPTION, RADIATIVE CAPTURE,
GERMANIUM ISOTOPE, GAMMA TRANSITION, ELECTRON STRUCTURE, NUCLEAR SPIN,
NUCLEAR ENERGY LEVEL, LINE INTENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/1963

STEP NO--UR/0428/70/000/001/0095/0100

CIRC ACCESSION NO--AP0114377

UNCLASSIFIED

2/3 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0114377

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRA OF GAMMA RAY EMISSION IN THE REACTIONS PRIME70 GE(N, GAMMA) PRIME71 GE, PRIME72 GE(N, GAMMA) PRIME73 GE, AND PRIME73 GE(N, GAMMA) PRIME74 GE FOR THE ACTION OF THERMAL N ON THE SEPD. ISOTOPES PRIME70 GE, PRIME72 GE, AND PRIME73 GE WERE DETD. BY USING A MAGNETIC COMPTON SPECTROMETER. AN EXPTL. TECHNIQUE DESCRIBED IN EARLIER WORK BY RUDAK AND FIRSOV WAS APPLIED. SCHEMES OF GAMMA TRANSITIONS IN THE NUCLEI OF THE 3 GE ISOTOPES UPON CAPTURING A N ARE GIVEN. IN THE TRANSITION FROM ZN ISOTOPES TO GE AND SE ISOTOPES, THE 2P SUBONE HALF N SUBSHELL BECOMES COMPLETELY FILLED AND FILLING OF THE 1G SUBNINE HALVES SUBSHELL BEGINS. THIS IS REFLECTED IN THE SYSTEM OF ENERGY LEVELS ON NUCLEI AND THE SCHEMES OF ENERGY RELEASE BY NUCLEI ACTIVATED IN THE (N, GAMMA) REACTION AND DECAYING FROM THE INITIAL STATE. IN ADDN. TO LEVELS WITH LOW SPIN VALUES, LEVELS WITH HIGH VALUES OF THE SPIN APPEAR. THUS, THE GROUND STATE OF PRIME73 GE HAS THE CHARACTERISITC (NINE HALVES) PRIME POSITIVE AND THE INITIAL STATE ON CAPTURING A N BY PRIME 72 GE THAT OF (ONE HALF) PRIME POSITIVE. SIMILARLY, ON CAPTURE OF A THERMAL N BY THE PRIME73 GE NUCLEUS AND INITIAL STATE WITH THE SPIN 4 PRIME POSITIVE, 5 PRIME POSITIVE, IS FORMED. THE GREAT DIFFERENCE BETWEEN THE SPIN VALUES OF THE GROUND AND INITIAL STATE INCREASES THE MEAN AMT. OF GAMMA QUANTA PER CAPTURED N (4.0 AND 4.6 FOR PRIME73 GE AND PRIME74 GE, RESP.). IN THE RANGE OF MASS NOS. A CONGRUENT TO 70, THE N FORCE FUNCTION DECREASES.

UNCLASSIFIED

3/3 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0114377

ABSTRACT/EXTRACT--ALTHOUGH THE GAMMA TRANSITIONS OF NUCLEI TAKE PLACE ESSENTIALLY AFTER CAPTURE OF THERMAL N ON P LEVELS, THE PART PLAYED BY THE DIRECT CAPTURE OF N IS CONSIDERABLY REDUCED VS. NUCLEI WITH A CONGRUENT TO 50. THIS IS INDICATED BY A DECREASE IN THE INTENSITIES OF GAMMA LINES WITH HIGH ENERGIES. FACILITY: INST. FIZ., MINSK, USSR.

UNCLASSIFIED

R Nuclear Physics

USSR

RUDAK, E. A., FIRSOV, YE. I., KHILMANOVICH, A. M., Institute of Physics, Academy of Sciences, Belorussian SSR

"The γ -Ray Spectrum From the Reaction of Se^{74} (n, γ) Se^{75} on Thermal Neutrons

Moscow, Yadernaya Fizika, Vol 11, No 6, 1970, pp 1129-1132

Abstract: The Se^{75} nucleus is one of the least studied nuclei. Some information concerning level decay with an energy of less than 1.2 Mev has been obtained from data concerning the radioactive decay of Br^{75} . Only one study is known that deals with research on the (d,p)-reaction on a specimen with poor enrichment with respect to the Se^{74} isotope. Data concerning energies and quantum characteristics of levels with an energy greater than 1.2 Mev are virtually absent. In this connection, research on the Se^{74} (n, γ) Se^{75} reaction is of definite interest, since it permits information to be obtained concerning the little-studied levels of the Se^{75} nucleus. In the present study, the γ -ray

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USSR

RUDAK, E. A., et al, Yadernaya Fizika, Vol 11, No 6, 1970,
pp 1129-1132

spectrum from the reaction of $\text{Se}^{74} (n, \gamma) \text{Se}^{75}$ on thermal neutrons was studied by means of a magnetic Compton spectrometer with a resolution of 2% on the IRT reactor of the Academy of Sciences, Belorussian SSR. A diagram of γ -transitions of the Se^{75} nucleus from the initial state in the (n, γ) reaction is proposed.

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--GAMMA RAY SPECTRUM FROM THE ,N, GAMMA, REACTION BASED ON THERMAL
NEUTRONS IN A NATURAL MISTURE OF MAGNESIUM ISOTOPES -U-
AUTHOR-(03)-RUDAK, E.A., FIRSOV, YE.I., KHILMANOVICH, A.M.
CCUNTRY OF INFO--USSR
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. FIZ.--MAT. NAVUK 1970, (1),
125-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--RADIATIVE CAPTURE, GAMMA SPECTRUM, THERMAL NEUTRON, NEUTRON
ABSORPTION, MAGNESIUM ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0064 STEP NO--UR/0428/70/000/001/0125/0126
CIRC ACCESSION NO--AP0111258
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0111258

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GAMMA RAY SPECTRUM OF A MG ROD
WAS STUDIED (DIAM. 5 CM, AND WEIGHT 1700 G) BY THE METHOD DESCRIBED
PREVIOUSLY (RUDAK, ET AL., 1965). FACILITY: INST. FIZ., MINSK,
USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--STRUCTURE OF MATRIX ELEMENTS OF NUCLEON PAIR INTERACTIONS IN NUCLEI
-U-
AUTHOR--RUDAK, E.A. *R*
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(5), 1024-7
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--MATRIX ELEMENT, NUCLEON INTERACTION, NUCLEAR SHELL MODEL

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0576 STEP NO--UR/0367/70/011/005/1024/1027
CIRC ACCESSION NO--AP0137661
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 009

CIRC ACCESSION NO--AP0137861

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE MATRIX ELEMENT OF THE NUCLEON
PAIR INTERACTION CAN BE CONSIDERED AS THE SUM OF INTERACTIONS HAVING A
VERY SIMPLE STRUCTURE WITH RESPECT TO THE RESULTING SPIN. IN NUCLEI
PRIME38 CL AND PRIME40 K WHICH ARE WELL DESCRIBED BY THE SHELL MODEL THE
CALCD. SPECTRA OF LEVELS AGREE WITH EXPTL. ONES.
INST. FIZ., MINSK, USSR.

UNCLASSIFIED

USSR

UDC 533.601.15

DULOV, V. G., RUDAKOV, A. I., Novosibirsk

"Supersonic Flows Propagated to Long Distances from a Body of Finite Volume"

Moscow, Zhurnal Prikladnoy mekhaniki i tekhnicheskoy fiziki, No 3, 1972, pp 77-83

Abstract: The equations of gas dynamics converted to independent pressure variables — two functions of current -- are simplified under the assumption that the zone of disturbed motion is narrow and the variations of the flow parameters are small. In physical space, simplifications of this type are usually used to describe flows of the "short wave" type [A. A. Grib, et al., Zhurnal Prikladnoy mekhaniki i tekhnicheskoy fiziki, No 1, 1960]. The general solution of the approximate equations is constructed in the form convenient for studying the disturbed flow at sufficiently large distances from a streamlined body of three-dimensional configuration. Planes exist in each of which the motion can be described quasitwo-dimensionally by the relations for currents with axial symmetry. A study was made of the effect of the curvature of the current surface of the asymptotic state of the motion. The limiting transitions to the investigated cases of axisymmetric flows [G. B. Whitham, "The Flow Pattern of a Supersonic Projectile," Communs. Pure and Appl. Math., Vol 5, No 3, 1962] are checked.

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UDC 681.142.644.3

USSR

ADERIKHIN, V. P., COLIKOVA, T. G., KUZ'MICHEV, V. I., LANTSMAN, B. I.,
LESKOV, V. G., RUDAKOV, A. N., and SOBOLEVA, E. I.

"A Device for Calculating a Partial Derivative"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 12, Apr 72, Author's Certificate No 334574, Division G, filed 22 Dec 70,
published 30 Mar 72, p 184

Translation: This Author's Certificate introduces a device for calculating a partial derivative. The device contains a servo system for the independent variable and a servo system for the differentiable function which are based on integrators. The inputs of the integrators are connected through corresponding switches to the outputs of the corresponding scalars. The device also contains a comparator with a reference voltage source connected to one of its inputs. As a distinguishing feature of the patent, computing precision is improved by adding a delay line, logic devices, a memory unit, and an additional switch. The output of the scalar in the independent-variable servo system is connected to the first input of the logic device and to the second input of the comparator. The output of the comparator is connected to the controlling input of the additional switch. This switch

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USSR

ADERIKHIN, V. P., et al., Otkrytiya, Izobreteniya, Promyshlennyye Otkrytiya,
Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334574, Division G,
filed 22 Dec 70, published 30 Mar 72, p 184

connects the output of the scaler in the function servo system to the second input of the logic device, and through a delay line to the controlling inputs of the servo system switches. The memory unit is connected to the output of the logic device.

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1/2 029 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--CORRELATION OF PHYSICAL BEHAVIOR OF POLYIMIDES WITH THEIR STRUCTURE
-U-
AUTHOR--(05)--RUDAKOV, A.P., BESSONOV, M.I., TUICHYEV, SH., KOTON, M.M.,
FLORISKIY, F.S.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3) 641-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYIMIDE RESIN, POLYMER STRUCTURE, IMIDE, ELASTICITY,
MOLECULAR INTERACTION, CHEMICAL BONDING, CONJUGATED POLYMER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/0326 STEP NO--UR/0459/70/012/003/0641/0648
CIRC ACCESSION NO--AP0111520

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111520

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DISCUSSION WITH 11 REFS. OF THE PROPERTY STRUCTURE RELATIONS OF I, WHERE R AND P PRIME ARE TETRAVALENT AND DIVALENT AROMATIC RINGS RESP. OR CONSIST OF SUCH AROMATIC RINGS SEPD. BY O, S, SO SUB2, OR CH SUB2 BRIDGES. THE IMIDE RING, WHICH INTERRUPTS THE CONJUGATION OF THE POLYMER CHAIN ACTS AS A "HINGE" AND INFLUENCES THE ELASTICITY OF I. THE TEMPS. OF I PHASE TRANSITION POINTS DEPEND NOT ONLY ON THE CHAIN ELASTICITY, BUT ALSO ON THE INTERMOL. INTERACTIONS, IN PARTICULAR ON THE BONDING BETWEEN CO GROUPS OF THE IMIDE RINGS.

UNCLASSIFIED

USSR

UDC 621.791.14:669.14.018.298.3

RUDAKOV, A. S., Engineer (Chelyabinsk Polytechnical Institute), GURFINK, B. I., KOBZEV, I. F., Engineers, and YERETNOVA, V. M., Engineer (Chelyabinsk Tractor Plant imeni V. I. Lenin)

"Friction Welding of Heat-Treated Type-45 Steel"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, p 51

Abstract: For some time, special socket wrenches have been manufactured by butt resistance welding of sockets of type-45 steel to a connecting rod of type-20 steel, followed by heat treatment. In order to make better use of equipment and improve heating and hardening modes, it has been suggested that the sockets be heat treated before being welded to the rod. The sockets are then friction-welded to the rod using a machine developed at the plant. This article presents the results of strength and structural testing of the metal in and around the joints thus produced. The properties are satisfactory.

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Acc. Nr:

AP0040971

Ref. Code: UR 0422

PRIMARY SOURCE: Standarty i Kachestvo, 1970, Nr 1, pp 32-33

/ Standardization of Piezoceramic Materials.

Rudakov, B. V.; Lavrovskiy, Ye. V.

The current state of standardization in piezoceramic materials is discussed. An analysis is given of the now valid specifications for these materials, and the requirements are presented of the new standard Materials, piezoceramic. Types and Makes. Specification. The Soviet-made materials are compared with the foreign ones. Prospects for further standardization of piezoceramics are briefly outlined. 1

REEL/FRAME
19750710

Burn Studies

USSR

UDC 617-001.17-092.9-085.835.3

RUDAKOV, B. YA., Main Clinical Military Hospital imeni Academician N. N. Burdenko and Chair of Surgery of the Military Medical Faculty, Central Institute of Advanced Training for Physicians, Moscow

"Use of Oxygen at Elevated Pressure for the Treatment of Experimental Burns"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, Vol 16, No 4, Jul/Aug 71, pp 82-86

Abstract: One of the characteristics of burn trauma is tissue hypoxia, which cannot be always counteracted by O_2 at ordinary pressure; an increase of the O_2 partial pressure by dozens of times is necessary. The effects of hyperbaric oxygenation were studied on dogs with severe experimental burns covering 15 or 25% of the body surface that were treated by subjecting them to an O_2 pressure of 3 atm in a pressure chamber. Daily treatment in the chamber gradually lowered deviations of the acid-base balance of the animals from the normal, reducing acidosis; increased the O_2 tension vs. untreated controls in healthy and damaged tissues, particularly in the latter; and accelerated the healing of the burn wounds. A single treatment in the chamber
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USSR

RUDAKOV, B. YA., Eksperimental'naya Khirurgiya i Anesteziologiya, Vol 16,
No 4, Jul/Aug 71, pp 82-86

could not be continued for more than 1 hr, because all animals developed spasms. The composition of gases in the blood and the acid-base balance reached normal levels sooner under the effect of O_2 at an elevated pressure than at normal air pressure. The treatment of dogs with burns covering 15% of the body surface was more effective than that of dogs with burns covering 25% of the body surface; 2 dogs out of 15 died in the first group vs. 8 out of 15 in the second.

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50

USSR

UDC 669.18:542.5

MEDZHIBOZHESKIY, M. Ya., Doctor of Technical Sciences, KUZNETSOV, A. F.,
LYKIN, A. A., and RUDAKOV, G. A., Candidates of Technical Sciences

"Effect on Liquid Steel Output of Certain Parameters of Oxygen Blowing Into a
High-Capacity Martin Furnace Bath"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-
Oct 70, pp 10-12

Abstract: A study was made of the effect of certain parameters of oxygen blowing into a steel bath (blowing rate, oxygen concentration in the blowing-through mixture, melting time, total expenditure of oxidizers, etc.) The oxygen blowing rate substantially affects the liquid metal output, so that there is an increase in metal losses in the form of oxides and regulus in the slag and as dust in the combustion products. The relationship between the blowing intensity and metal losses is expressed by a formula established from data on more than 300 melts. It follows from this formula that every 1000 m³/hr increase in blowing rate reduces the liquid metal output by 1.2%. This may be compensated by reducing the melting time and oxygen concentration in the blowing-through mixture.

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USSR

MEDZHIBOZHSKIY, M. Ya., et al, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-Oct 70, pp 10-12

A reduction in oxygen concentration from 95 to 65% at a 3000 m³/hr average blowing rate increased the liquid steel output by 1.7%. Figures show the dependence of liquid steel output on oxygen purity, melting time, specific oxygen flow rate and total expenditure of oxides. A table shows results of a series of experimental meltings conducted with the purpose of determining the metal losses in the form of dust and slag particles.

2/2

Radiobiology

USSR

UDC 577.391:615.771.8

STRELIN, G. S., SHMIDT, N. K., and RUDAKOV, I. A., Central Scientific Research Institute of Roentgenology and Radiology, Ministry of Health USSR, and Institute of Medical Radiology, Academy of Medical Sciences USSR

"Postirradiation Restoration of Hemopoiesis Through Transplantation of Autologous Bone Marrow"

Moscow, Uspekhi Sovremennoy Biologii, Vol 72, Vyp 3(6), 1971, pp 375-390

Abstract: Literature on experimental methods of treating the radiation sickness by transplanting compatible bone marrow tissue is reviewed, with 146 references cited. Emphasis is placed on two methods: 1) removing and preserving a certain quantity of the bone marrow prior to irradiation and reimplanting it into the donor after irradiation and 2) utilizing bone marrow from areas which happened to be protected during exposure to radiation and infusing them into the patient's circulation to speed up the natural process of dissemination of healthy bone marrow cells. The role of the various bone marrow cells, especially the stem cells, in the development of and recovery from radiation sickness is discussed.

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USSR

UDC 576.8.077.35

RUDAKOV, I. A., RUDAKOVA, S. F., and ZYABLITSKIY, V. M., Laboratory of Experimental Hematology, Division of Radiation Pathophysiology, Institute of Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"Stimulation of the Restoration of Hematopoiesis in Whole-Body Irradiated Animals by Dispersal of Hematopoietic Cells in the Early Postirradiation Period"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, Oct 70, pp 98-101

Abstract: Rats and mice were exposed to whole-body gamma irradiation. After 1-2 hours, a needle was inserted through the distal end of the femoral bone into the medullary canal and then moved about vigorously to destroy the bone marrow. Some 50% of the myelokaryocytes were washed into the bloodstream as a result. As a result of this procedure restoration of the bone marrow, platelets, and leukocytes was more rapid in experimental animals than in irradiated but untreated controls. The beneficial effect of postirradiation dispersal of marrow cells is probably due to the artificial washing out of the surviving hematopoietic elements (the stem cells in particular) into the peripheral blood, where they form new foci of hematopoiesis.

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UDC 591.1.15

USSR

RUDAKOV, N. P.

"Activity of Potassium Ions in Fast-Neutron Irradiated Rat Blood"

V sb. Biofizika i radiobiol. (Biophysics and Radiobiology -- Collection of Works), Vyp 3, Kiev, "Nauk. dumka," 1972, pp 32-43 (from RZh-Biologicheskaya Khimiya, No 10, 25 May 1972, Abstract No 10F1397 from summary)

Translation: A study was made by means of ion-selective electrodes of the change in K^+ activity in the erythrocytes, plasma and whole blood of rats exposed to whole-body fast-neutron irradiation in doses of 200 and 300 rads. During the post-irradiation period a K^+ redistribution between erythrocytes and plasma, which has a phase character and is dependent on irradiation dose, takes place in the animals' blood. K concentration in whole blood does not vary significantly in the course of radiation sickness, but increases appreciably during the period preceding an animal's death.

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USSR

UDC 591.1.15

RUDAKOV, N. P., and TATSIY, Yu. A.

"Repair Rate of Radiation Injuries in Rats and Disturbance of Certain Metabolic Processes in the Liver After Whole-Body and Local Fast-Neutron Irradiation"

V sb. Biofizika i radiobiol. (Biophysics and Radiobiology -- Collection of Works), Vyp.3, Kiev, "Nauk. dumka," 1972, pp 43-61 (from RZh-Biologicheskaya Khimiya, No 10, 25 May 1972, Abstract No 10F1412 from summary)

Translation: The rate of repair processes for radiation injuries in rats pre-exposed to whole-body or local fast-neutron irradiation was found to be approximately the same as in gamma- and X-irradiation. With both methods of irradiation nonspecific changes were discovered in the animals' liver in tissue sorptive power, glycogen and lipid content, and alanine aminotransferase activity. An approximate estimate is given of the specific value of radiation injury in the total radiation reaction of the organism during neutron irradiation.

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USSR

UDC 533.99

BAZAKUTSA, V. A., MOSKALETS, V. F., RUDAKOV, N. S., GOROKHOV, M. P.

"Some Results of an Investigation of a Plasmatron Intended for Plasma-Chemical Reactions"

Minsk, V sb. Vopr. fiz. nizkoterperaturn. plasmy (Problems of the Physics of Low Temperature Plasma -- Collection of Works), "Nauka i tekhn.," 1970, pp 421-424 (from RZh-Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A343)

Translation: An investigation is made of electrical arcing in a transverse low-frequency magnetic field, based on a plasmatron with combined stabilization of the arc by a vortex flow of gas and the magnetic field. The voltampere characteristics of the discharge are obtained. 2 illustrations. Summary.

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USSR

UDC 63:576.8

MUROMTSEV, G. S., DERZHINSKIY, A. R., KURAKHTANOVA, T. I., ~~DERZHOVA~~ ~~DERZHOVA~~ and RUDAKOV, O. L., All Union Scientific Research Institute of Phytopathology, Bol'shiye Vyazemy, Moscow Oblast

"Deep Cultivation and Antibiotic Activity of the Mycoparasite *Darluka filum*"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 5, No 4, 1970, pp 579-582

Abstract: When grown in deep culture, the imperfect fungus *Darluka filum* (Biv-Bern) Cast., a hyperparasite of rust fungi, can synthesize at least four intracellular fungicidal antibiotics. The fungus grows on solid and liquid media with certain combinations of nitrogen and carbon sources, the most favorable being those with soybean meal (or corn extract), and glucose starch. In deep culture, *D. filum* synthesizes antibiotics that suppress the growth of yeasts and mycelial fungi of the genera *Alternaria*, *Beauveria*, *Botrytis*, *Cephalosporium*, *Cladosporium*, *Cryptococcus*, *Endothia*, *Fusarium*, *Gliocladium*, *Hansenula*, *Helminthosporium*, *Kabatiella*, *Monilia*, *Nematospora*, *Neurospora*, *Oospora*, *Penicillium*, *Pestalotia*, *Piricularia*, *Pichia*, *Pullularia*, *Rhizopus*, *Trichoderma*, *Verticillium*, *Torulaspora*, *Schwanniomyces*, *Debaryomyces*, *Endomyces*, *Candida*, and *Saccharomyces*. Media containing glucose and peptone or 1/2

USSR

MUROMTSEV, G. S., Sel'skokhozyaystvennaya Biologiya, Vol 5, No 4, 1970, pp 579-582

soybean meal, combined with various carbon sources, are best for synthesizing the antibiotics.

2/2

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USSR

UDC 911.3.616.9:597.6(571.18)

KORSH, P. V., RAVDONIKAS, O. V., MAL'KOV, G. B., VORONIN, Yu. K., ZIMINA, V. Ye., KOSTYUKOV, V. P., IVANOV, V. S., FEDOROVA, T. N., YEGOROVA, L. S., RUDAKOV, V. A., CHULOVSKIY, I. K., and SHAYMAN, M. S.

"On Carrier Characteristics and Contacts With Vectors of Viral and Bacterial Infections Among Omskaya Oblast Wild Animals"

V sb. Vopr. infekts. patol. (Problems of Infection Pathology -- collection of works) Vyp. 2, Omsk, 1970, pp 75-78 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.51)

Translation: A table is presented of species composition of oblast wild animals and their relative population by individual landscape subzones in Omskaya oblast (64 species). Transmission of infections with natural foci was established in 27 species for the following diseases: tickborne encephalitis, Omsk hemorrhagic fever, rabies, tickborne scrub fever, Q fever, tularemia, erysipelas, toxoplasmosis, and leptospirosis.

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RUDAKOV, V.A.

plasma physics

RUDAKOV, V.A.

plasma physics

JPRS 54619

6 December 1971

ELECTRIC CONDUCTIVITY AND CURRENT HEATING OF PLASMA
IN A STRONG MAGNETIC FIELD

IKS4/CN-20/29

Russian language report by P. Ya. Burchenko, Ye. N. Volkov, V. A. Rudakov, V. L. Shvachko, and N. N. Litvinov presented to the Fourth Conference on Plasma Physics and Controlled Fusion Research sponsored by the International Atomic Energy Agency at Madison, Wisconsin, 17-23 June 1971.

Experimental studies of the current heating of plasma completed on the closed magnetic trap, Tokamak, (1, 2) and stellarators "S" (3, 4) and "Sirius" (5, 6) have shown that in the case of strong magnetic fields B_0 and "Sirius" density of the plasma electrons, n_e , is observed at electric field E_0 (6-7) smaller than component in electron volts, E_0 is the temperature of its electrons speed of light.

Existing theory of anomalous electric conductivity for cases of weak magnetic fields (8-10) does not explain the results of the studies mentioned above.

Two mechanisms have been proposed (11, 12) for interpretation of data obtained with Tokamak, but their detailed comparison with experiment is still difficult because of limitations in the range of variations of plasma parameters in this apparatus. In addition, an attempt was undertaken in (13) to explain the resistance anomaly of magnetized plasma applicable to the stellarator experiments (3-6) in which weak electric field conditions were studied $E < E_k$.

For the purpose of investigating the criteria for stimulation of the effect studied and its microscopic characteristics on the "Sirius" stellarator (14) a series of experiments was performed whose separate results and their comparison with existing theoretical concepts are presented in this communication.

USSR

UDC:538.566+621.371

GRINGAUZ, K. I., GDALEVICH, G. L., RUDAKOV, V. A.

"Use of Spacecraft in Study of Ionospheric, Magnetospheric, and Interplanetary Plasma Performed by the Radio Engineering Institute of the Academy of Sciences USSR"

Tr. Radiotekhn. In-ta AN SSSR [Works of Radio Engineering Institute, Acad. Sci. USSR], No. 1, 1970, pp. 106-132 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Zh196 from the Resume)

Abstract: The primary results of experimental studies of plasma in the ionosphere of the earth and Venus and in near-earth, near-lunar, and interplanetary space performed by the Radio Engineering Institute of the USSR Academy of Sciences using missiles and satellites over the past ten years are presented briefly. Fifty-seven biblio. refs.

1/1

Magnesium

3

USSR

UDC 669.721.046.4(088.8)

REZNIKOV, I. L., POLYAKOV, Yu. A., KHASIN, L. B., PONYATENKO, V. V.,
KOROTKOV, Yu. A., RUDAKOV, V. A., and DUNAYEV, D. V.

"Method of Dehydration of Magnesium Chloride"

USSR Author's Certificate No 272569, Filed 30/04/68, Published 27/08/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G181 P)

Translation: A method is suggested for dehydration of $MgCl_2$ by fusion. To increase the productivity of the apparatus and improve the sanitary conditions, the initial salt is pressed into a strip under a pressure of over 600 kg/cm², ground, and classified, then the fraction of ground salt over 1 mm in size is melted. The salt melt thus produced is agitated by air.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--VARIATIONAL DESCRIPTION OF A RESONANCE CURVE -U-
AUTHOR--RUDAKOV, V.I. *R*
COUNTRY OF INFO--USSR
SOURCE--VESNIK LENINGRADSKOGO UNIV. FIZ. KHIM, (USSR), NO. 1, P. 161-3
(1970)
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--S MATRIX, ENERGY THEORY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605029/D01 STEP NO--UR/0054/70/000/D01/0161/0163
CIRC ACCESSION NO--AP0141713
UNCLASSIFIED

2/2 014
CIRC ACCESSION NO--AP0141713
ABSTRACT/EXTRACT--(U) GP-0--

UNCLASSIFIED

PROCESSING DATE--11DEC70

RESIDUE OF S MATRIX AT THE ABSTRACT. A VARIATIONAL PRINCIPLE FOR THE
RELATION OF THIS METHOD TO THE SIMPLE POLES HAS BEEN SUGGESTED. THE
OF THE S MATRIX POLES IN A COMPLEX ENERGY PLANE IS DISCUSSED. THE VARIATIONAL PRINCIPLES FOR THE LOCATION

UNCLASSIFIED

AP0048373

Abstracting Service:

INTERNAT. AEROSPACE ABST

Ref. Code:

570 480293

A70-24303 # Comparative effectiveness of discrete and continuous navigation measurements in the problem of determining an orbital plane (O sravnitel'noi effektivosti diskretnykh i nepreryvnykh navigatsionnykh izmerenii v zadache opredeleniia ploskosti orbity). V. M. Ardzakov, *Kosmicheskie Issledovaniia*, vol. 8, Jan.-Feb. 1970, p. 13-18. In Russian.

Consideration of the problem of comparing the variances of parameter estimates obtained by the method of maximum likelihood from the results of independent (discrete and continuous measurements. For the case of a circular orbit relations are derived between the frequency of independent navigation measurements and the parameter of an exponential error correlation function of continuous measurements. These relations are used to establish which of these two types of measurements is most effective and under what conditions it is most effective.

A.B.K.

REEL/FRAME
19800081

12

USSR

UDC 620.179.15

GERSHBERG, M. V., ZELENKOV, A. L., ILYUSHIN, S. V., PERVITSKIY, Yu. D.,
RUDAKOV, V. N.

"The RT-68 Radiation Defectoscope"

Defektoskopiya, No 4, 1971, pp 115-121.

Abstract: A description is presented of the RT-68 commercial radiation defectoscope, designed for testing of glass reenforced plastic pipe and other types of pipe of similar dimensions. The defectoscope operates by the principle of mechanical scanning of the probe device, producing a visual picture of the distribution of defects. The device consists of the probe device with its lines, intermediate frequency amplifiers and power supply, the scanning mechanism of the probe device and the defect recording system, consisting of the visualization unit and beam scanning sensors. A block diagram and photograph of the device are presented.

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Radiobiology

USSR

UDC 612.015.348.015.36.014.482.4

IVANOV, I. I., and RUDAKOV, V. V. Military Medical Academy imeni S. M. Kirov and Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Interpretation of Experimental Data on the Effects of Ionizing Radiation on Systems Synthesizing Proteins (Synthesis of Milk Proteins in Lactating Mammary Glands)"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 3, 1971, pp 731-732

Abstract: Results obtained in experiments in which isolated lactating mammary glands of goats were irradiated in vitro and intact lactating glands of rats were irradiated in vivo indicate that normal synthesis of milk proteins (nutrient proteins, enzymes, and antibodies) continues for 2-5 hours after irradiation with 5,000 r but rapidly declines and ceases 3-7 days later. It is suggested that this delayed effect is due to damage done to segments of matrix DNA. Thus, protein synthesis is maintained by messenger and transfer RNAs present in the secretory cells, but ceases after these ribonucleic acids are used up. This mechanism also explains all other delayed manifestations of radiation sickness.

1/1

1/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--REACTION OF COBALOXIMES WITH URACIL DERIVATIVES -U-

AUTHOR--(04)--BRGDULINASHVETS, V.I., RUDAKOVA, I.P., DYKOVA, S.F.,
YURKEVICH, A.M.

CCOUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 703-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COBALT COMPLEX, OXIME, URACIL, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/0877

STEP NO--UR/0079/70/040/003/0703/0704

CIRC ACCESSION NO--AP0124540

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124540

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. REACTION OF HYDRIDES OF COBALOXIMES WITH URACIL DERIVS. RESULTS IN INCLUSION OF CO IN THE URACIL RING IN REACTIONS USING HYDRIDES OF DIMETHYL, AND DIPHENYLGLYOXIMATE COMPLEXES OF CO WITH PYRIDIEN AND PH SUB3 P LIGANDS, AND URACIL, URIDIEN, 2 PRIME, ANHYDROURIDINE, OR URIDINE, 5 PRIME, PHOSPHATE AS THE OTHER REACTANT. THIS AFFORDS A NEW ROUTE TO POLYNUCLEOTIDE MODIFICATIONS. REACTION OF 0.28 G I IN AQ. ETOH UNDER N WITH A SOLN. OF 0.0167 G NABH SUB4 IN ETOH FORMED A BLUD GREEN HYDRIDE; 0.0445 G URACIL IN H SUB2 O WAS ADDED AND THE MIXT. KEPT 45 MIN TO PPT. 75PERCENT II. THE REACTION MECHANISM WAS DISCUSSED. FACILITY: VSES. NAUCH. ISSLED. VITAM. INST., USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF AXIAL SUBSTITUTIONS ON COBALT CARBON AND COBALT NITROGEN
BONDS IN COBALOXIMES -U-
AUTHOR--(05)-ROSHCHUPKINA, O.S., RUDAKOVA, I.P., POSPELOVA, T.A.,
YURKEVICH, A.M., BORODKO, YU.G. *R*
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 466-70
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COBALT COMPLEX, OXIME, PYRIDINE, IR SPECTRUM, ELECTRON DONOR,
EXCHANGE REACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1419 STEP NO--UR/0079/70/040/002/0466/0470
CIRC ACCESSION NO--AP0116866
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116866

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING CHLOROPYRIDINE (OR
TRIPHENYLPHOSPHINO) BIS(DIMETHYLGLYOXIME)COBALT SUSPENSION IN AQ. ETOH
WITH NABH SUB4 GAVE COBALOXIMES I WITH INDICATED L AND R: C SUB5 H SUB5
N, ME, M. 220DEGREES; C SUB5 H SUB5 N, CD SUB3, D. 210DEGREES; PH SUB3
P, ME, M. 174-6DEGREES; PH SUB3 P, CD SUB3, M. UNSTATED; ME SUB2 S, ME,
M. 178DEGREES; H SUB2 O, ME M. 108DEGREES; C SUB5 H SUB5 N, HOCH SUB2
CHCH SUB2 CL, M. 179-80DEGREES. THE IR SPECTRA ARE SHOWN. INCREASED
ELECTRON ACCEPTOR NATURE OF SUBSTITUENTS IN I REDUCES THE FREQUENCY OF
CO-C AND CO-N BANDS WHILE INCREASED ELECTRON DONOR ABILITY OF AXIAL
LIGANDS IN I SHIFTS THE CO-C AND CO-N BANDS TOWARD HIGHER FREQUENCIES.
FACILITY: VSES. NAUCH.-ISSLED. VIT. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 547.26'118 + 546.183-31

GAZIZOV, M. B., RAZUMOV, A. I., SYRNEVA, L. P., and RUDAKOVA, L. G.,
Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Reaction of Phosphorylated Acetals With Trivalent Phosphorus Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, p 2787

Abstract: Phosphorylated acetals react with diethylchlorophosphite after 8 hrs heating at 50-60° yielding diethylphosphorous acid and esters of β-ethoxyvinylphosphonic or phosphinic acids — $R(C_2H_5O)P(O)CH:CHOC_2H_5$; R, yield in %, b.p./mm pressure, d_4^{20} , and n_D^{20} being reported: C_2H_5O , 74.2, 75°/0.12, 1.0700, 1.4435; CH_3 , 65.7, 80°/0.25, 1.0524, 1.4570; C_2H_5 , 77.5, 74°/0.09, 1.0367, 1.4560.

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USSR

UDC 616.981.40-036.1

RUDAKOVA, R. I., Candidate of Medical Sciences and PAVLOVA, YE. I., Chair
of Infectious Diseases, Omsk Medical Institute, Omsk

"Clinical Aspects of Infections Caused by Rare Types of Salmonella"

Moscow, Sovetskaya Meditsina, No 6, Jun 71, pp 63-66

Abstract: in 1960-1968, 52 cases of infection with rare types of Salmonella were observed including S. kisangani, S. abortus bovis, S. abortus ovis, S. essen, S. derby, S. brandenburg, S. mission, S. infantis, S. bovis morbi-
ficans, S. eastbournae, S. rubislaw, S. carrau, S. minnesota, and S. inverness. In the majority of cases, the infection developed after consumption of con-
taminated food. The infection was of the gastrointestinal, typhoid, influenza, subclinical or septic type in 30, 9, 7, 5, and 1 cases, respectively. The form of the disease was acute, moderate, or mild in 3, 29, and 20 patients, respectively. After an incubation period of 6-24 hrs, the disease started in a violent manner and was accompanied by a high fever. Less severe fever continued constantly or intermittently for periods of 1-150 days, most fre-
quently for 3-5 days. Symptoms of a toxic condition developed. The cardio-vascular system was involved in the majority of cases. Toxic nephrosis,
1/2

USSR

RUDAKOVA, R. I., and PAVLOVA, YE. I., Sovetskaya Meditsina, No 6, Jun 71,
pp 63-66

pyelitis, or pyelocystitis affected 8, 3, and 1 patients, respectively.
The course of the salmonellosis was favorable in every instance and ended
in recovery in all cases observed.

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USSR

UDC 621.311.4:621.316.545-523

USMANOV, F. KH, RUDAKOVA, R. M.

"Standard Layout for Double-Transformer Substations with Short-Circuiting Devices and Separators"

Tr. Ufim. aviats. in-ta (Works of Ufa Aviation Institute), 1970, vyp. 12, pp 121-126 (from RZh-Elektrotekhnika i Energetika, No 3, Mar 71, Abstract No 3Ye67)

Translation: Analysis and experience in the operation of dual-transformer substations with short-circuiting devices and disconnects having a switching circuit both with a repair jumper made of disconnects connected above the separators in the transformer circuit and a circuit with an automatic jumper with a separator and disconnect included below the disconnects in the transformer circuit, which is the standard circuit approved for application, demonstrates the advantages of this type of substation. This conclusion is drawn considering the operating experience of Bashkirenergo [Bashkir Power Administration] by the materials of which a series of data on the specific failure rate (λ) of different equipment, including the separators and disconnects, are presented. There are 2 illustrations.

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USSR

UDC 576.8.077.35

RUDAKOV, I. A., RUDAKOVA, S. F., and ZYABLITSKIY, V. M., Laboratory of Experimental Hematology, Division of Radiation Pathophysiology, Institute of Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"Stimulation of the Restoration of Hematopoiesis in Whole-Body Irradiated Animals by Dispersal of Hematopoietic Cells in the Early Postirradiation Period"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, Oct 70, pp 98-101

Abstract: Rats and mice were exposed to whole-body gamma irradiation. After 1-2 hours, a needle was inserted through the distal end of the femoral bone into the medullary canal and then moved about vigorously to destroy the bone marrow. Some 50% of the myelokaryocytes were washed into the bloodstream as a result. As a result of this procedure restoration of the bone marrow, platelets, and leukocytes was more rapid in experimental animals than in irradiated but untreated controls. The beneficial effect of postirradiation dispersal of marrow cells is probably due to the artificial washing out of the surviving hematopoietic elements (the stem cells in particular) into the peripheral blood, where they form new foci of hematopoiesis.

1/1

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